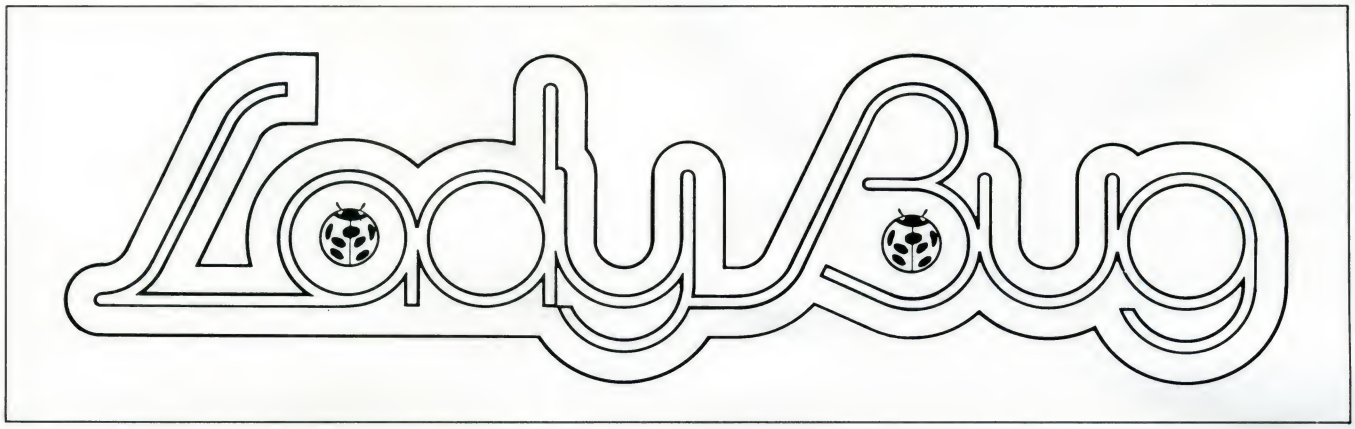


Additional Instruction

UNIVERSAL

'82, January

B. DRAWING OF CIRCUIT BOARD MOUNTING POSITIONS

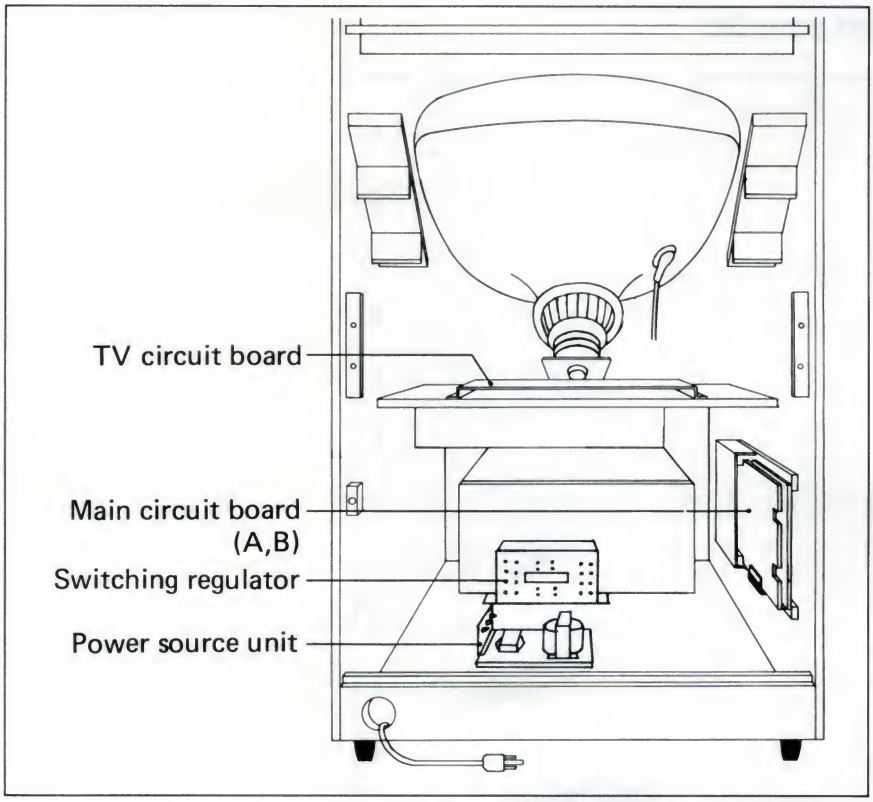


Fig. 5 Circuit Board Mounting Positions

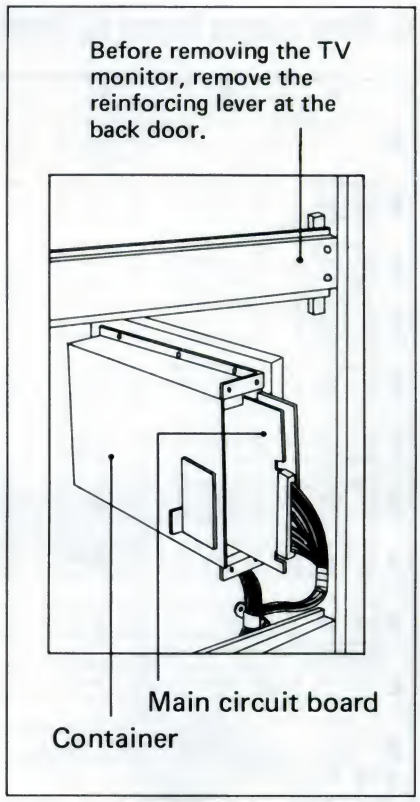


Fig. 6 Side View of Circuit Board Mounting Positions

C. FUSES

Fuses in the power source unit

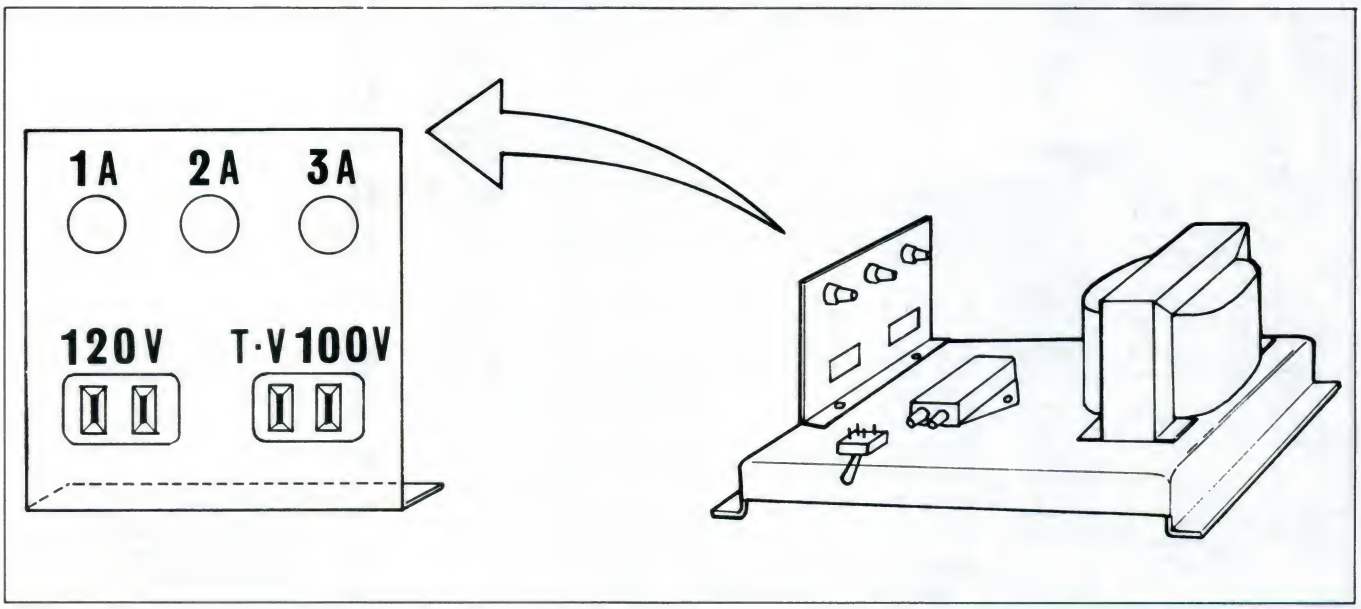
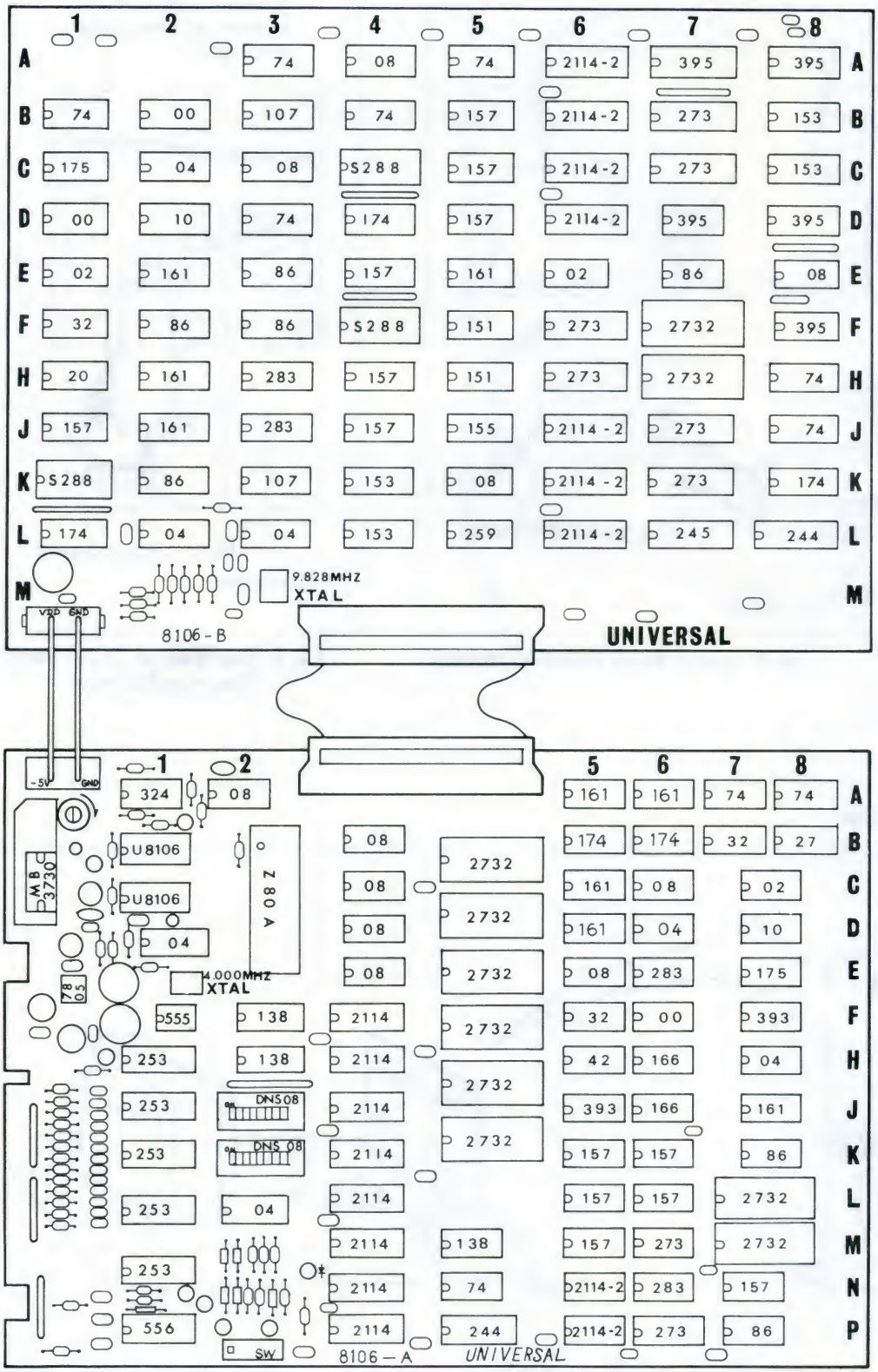


Fig. 7 Fuses in the Power Source Unit

VIII. CIRCUIT BOARD

A. CIRCUIT BOARD IC LOCATION AND PARTS LIST

a) Main circuit board IC location and parts list



This drawing provides standard information. Universal reserves the right to change without notice.

Fig. 22 Main Circuit Board

[1] Integrated Circuit

Item No.	Q'ty	Description
74LS 00	3	TTL
74LS 02	3	"
74LS 04	5	"
74 04	1	"
74 S 04	1	"
74LS 08	11	"
74LS 10	2	"
74LS 20	1	"
74LS 27	1	"
74LS 32	3	"
74LS 42	1	"
74LS 74	9	"
74LS 86	7	"
74LS107	2	"
74LS138	3	"
74LS151	2	"
74LS153	4	"
74LS155	1	"
74LS157	13	"
74LS161	9	"
74LS166	2	"
74LS174	6	"
74LS175	2	"
74LS244	2	"
74LS245	1	"
74LS253	5	"
74LS259	1	"
74LS273	8	"
74LS283	4	"
74 S288 (TBP18S030)	3	256 bits Bipolar RAM
74LS393	2	TTL
74LS395	5	"
NE555	1	Timer
NE556	1	"
Z80A	1	Nch MOS CPU (4MHz)
2732	4	Nch MOS 32K bits EP ROM (Access 450nsec)
2732-35	6	Nch MOS 32K bits EP ROM (Access 350nsec)
2114	8	Nch MOS 4K bits Static RAM (Access 450nsec)
2114-2	9	Nch MOS 4K bits Static RAM (Access 250nsec)
U8106	2	Special function
LM324	1	Quad Operational Amplifiers
MB3730	1	Power Amplifiers
MA7805	1	Regulator

[2] Other Semiconductor Devices

Item No.	Q'ty	Description
TLR103	1	LED
10D1	6	Diode

[3] Capacitors

Rating	Q'ty	Description
100P1/12V	2	Ceramic Capacitor
0.001μ/ "	1	"
0.01μ/ "	2	"
0.1μ / "	54	"
0.1μ/25V	3	"
1μ/25V	1	Chemical Capacitor
47μ/25	2	"
4.7μ/25V	2	"
10μ/ "	2	"
22μ/ "	1	"
220μ/ "	4	"
470μ/ "	2	"

[4] Registors

Rating	Q'ty	Description
20Ω¼W	1	Carbon Solid
2KΩ¼W	2	"
100Ω¼W	2	"
4.7Ω "	2	"
47Ω "	1	"
220Ω "	18	"
330Ω "	2	"
470Ω "	6	"
510Ω "	4	"
1KΩ "	1	"
4.7KΩ "	1	"
5.1KΩ "	1	"
10KΩ "	2	"
47KΩ "	1	"
51KΩ "	1	"
100KΩ "	3	"
MS1028AM	8	1KΩ Registor Array
MS1024AM	1	"
MS1038AM	2	10KΩ Registor Array
RV16YP or RGP102	1	1KΩ (B) Variable Registor

[5] Misc

Name	Q'ty	Description
Dip SW	2	8 Elements Switch Array
X tal	2	9.828MHz 4.000MHz
E61-00A	1	Micro SW

WIRING DIAGRAM (CONNECTOR)

UPRIGHT TYPE

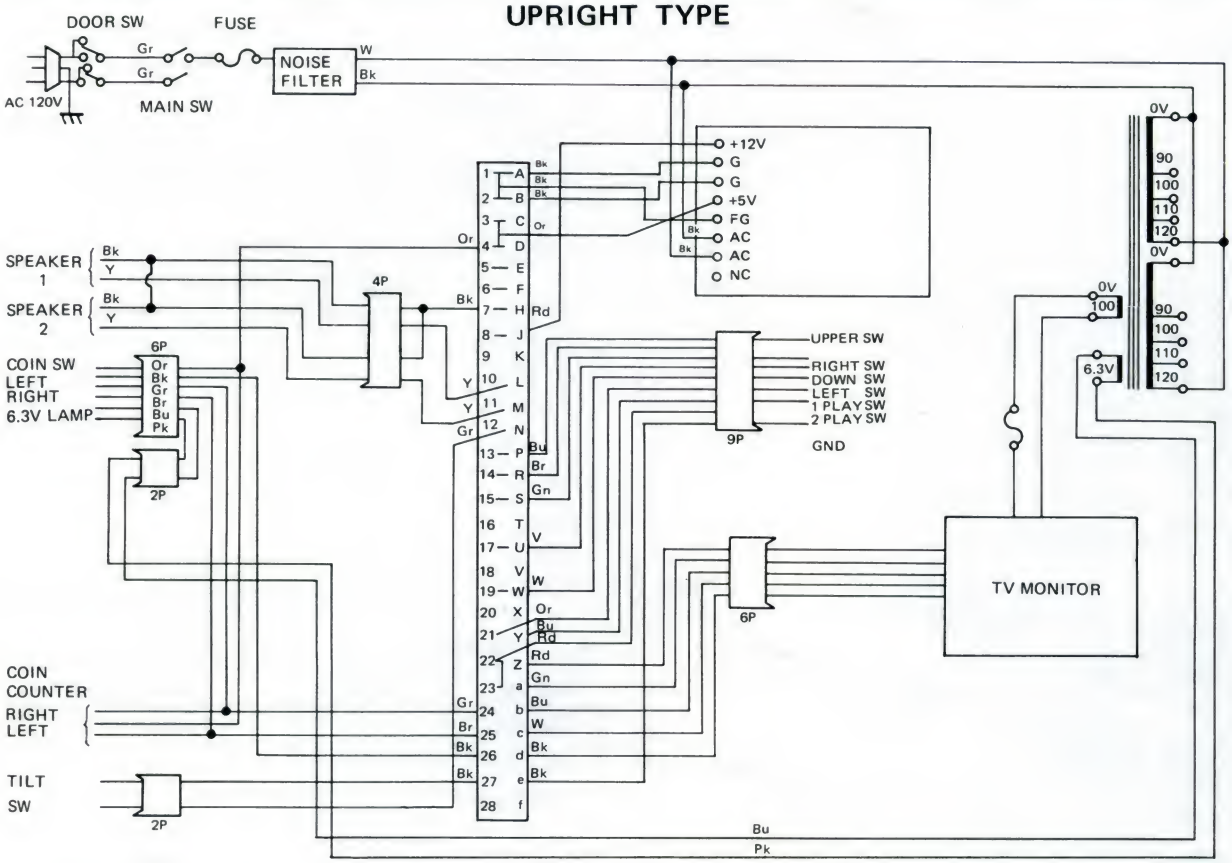
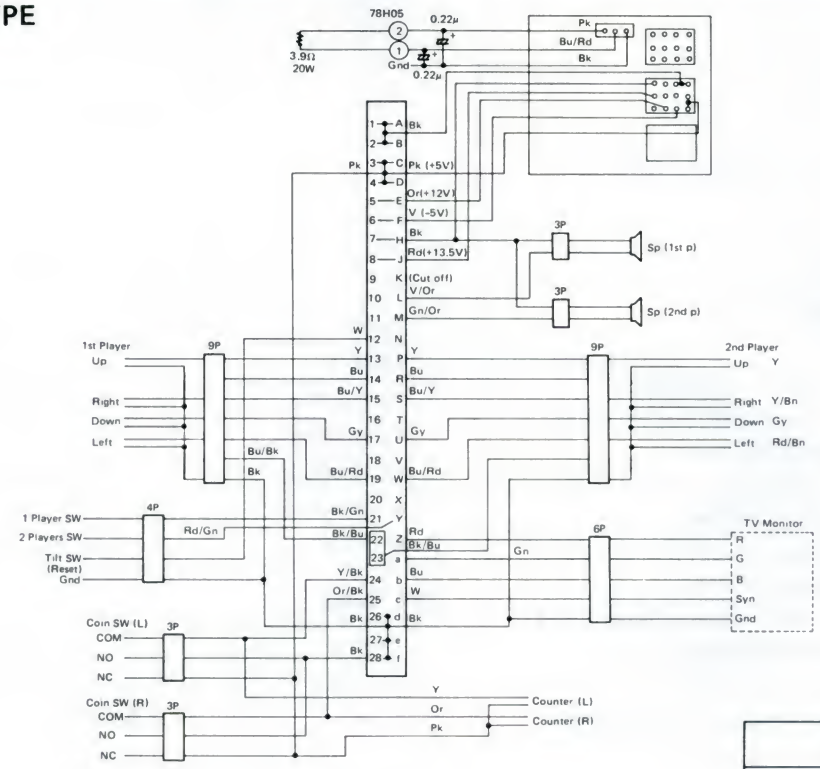


TABLE TYPE



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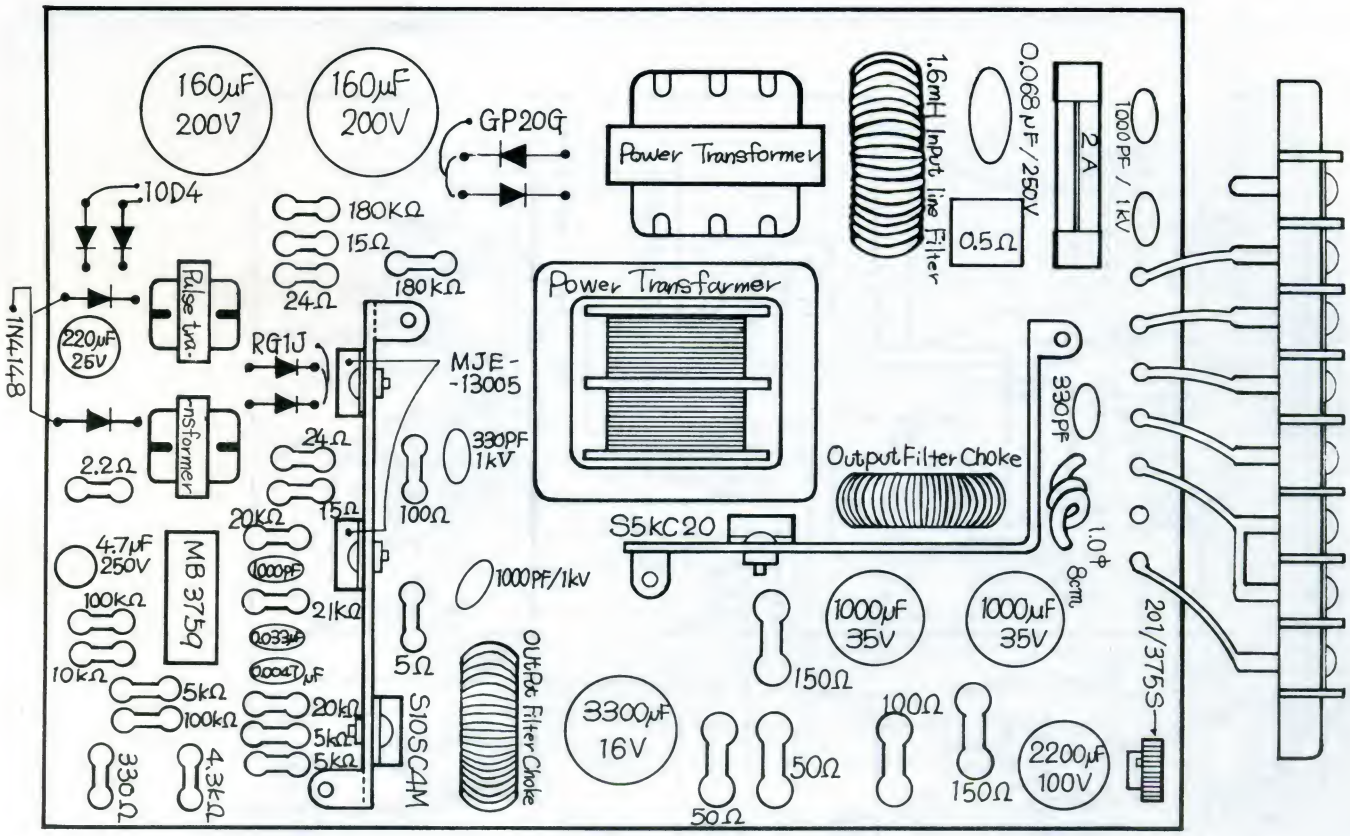
SWITCHING REGULATOR – LOCATION, PARTS LIST AND SCHEMATIC DIAGRAM



Rating	Q'ty	Description
0.5Ω 5W	1	Wire wound resistor
100Ω 2W	2	"
150Ω 4W	2	"
50Ω 2W	2	"
180kΩ ½W	2	Carbon film resistor
5Ω ½W	1	"
100kΩ ¼W	2	"
2.1kΩ "	1	"
20kΩ "	2	"
10kΩ "	1	"
2.2Ω "	1	"
330Ω "	1	"
15Ω "	2	"
24Ω "	2	"
5kΩ	3	Metal film resistor
4.3kΩ	1	"
1.0φ, 8cm	1	Resistor for current sensing
25kΩ 201/375S	1	Variable resistor
0.068μF/250V	1	PPN capacitor
160μF/200V	2	Electrolytic capacitor
1000μF/35V	2	"
220μF/25V	1	"
2200μF/16V	1	"
4.7μF/25V	1	"

Rating	Q'ty	Description
3300μF/16V	1	Electrolytic capacitor
330PF/1000V	2	Ceramic capacitor
1000PF/1000V	3	"
0.0047μF/100V	1	Mylar capacitor
0.033μF/100V	1	MEF capacitor
1000PF/100V	1	PEE capacitor

Item No.	Q'ty	Description
MJE13005	2	Switching power transistor
MB3759	1	PWM control circuit
RG1J	2	Fast recovery diode
GP20G	2	Rectifier
10D4	2	"
S5KC20	1	TO-220 package
S10SC4M	1	"
1N4148	2	Switching diode

Name	Q'ty	Description
Power transformer	1	For inverter
"	1	For MB3759 control circuit
Pulse transformer	2	For base drive
1.6mH input line filter	1	
+12V output filter chock	1	
+5V "	1	
Fuse	1	2A

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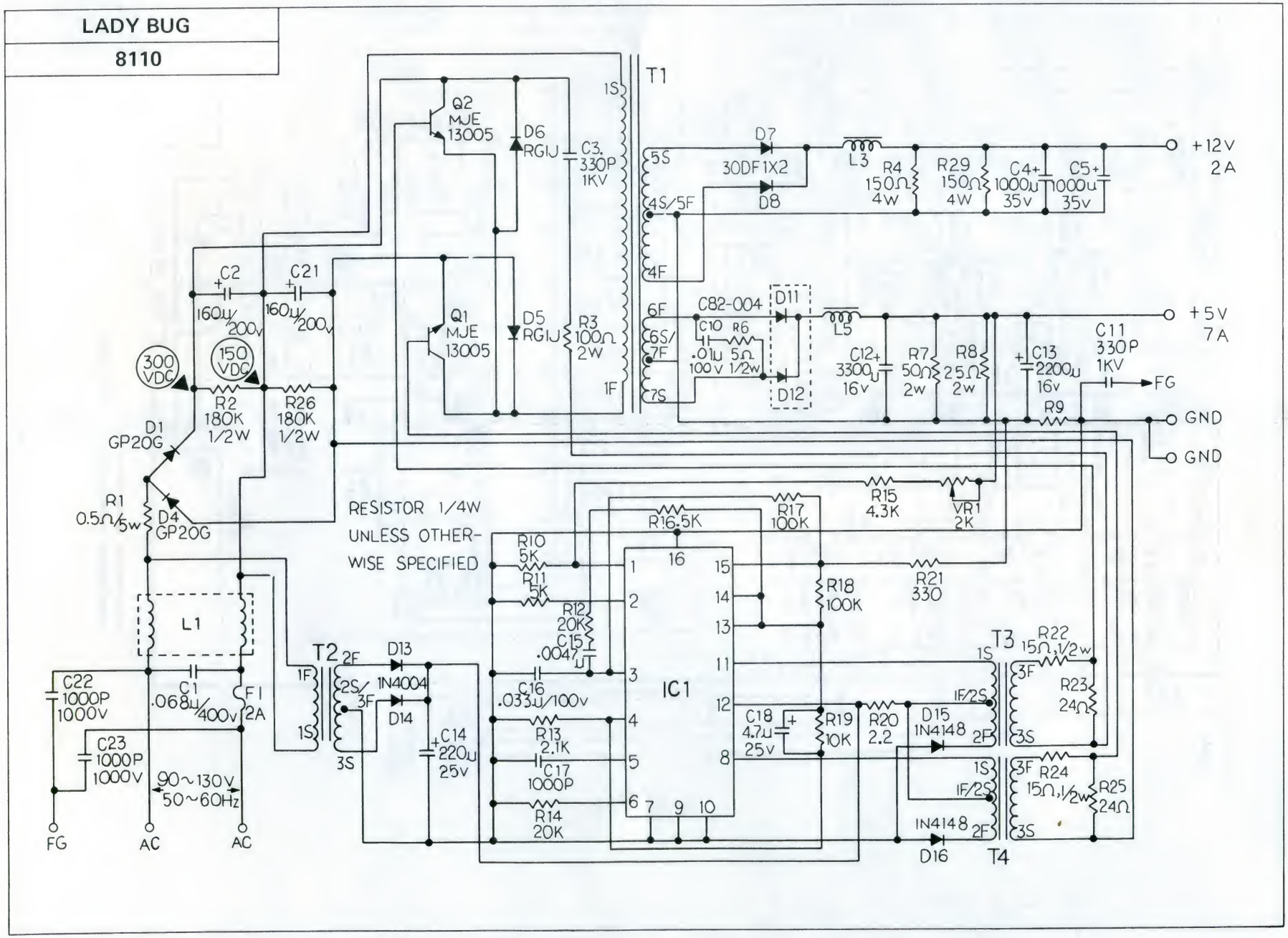
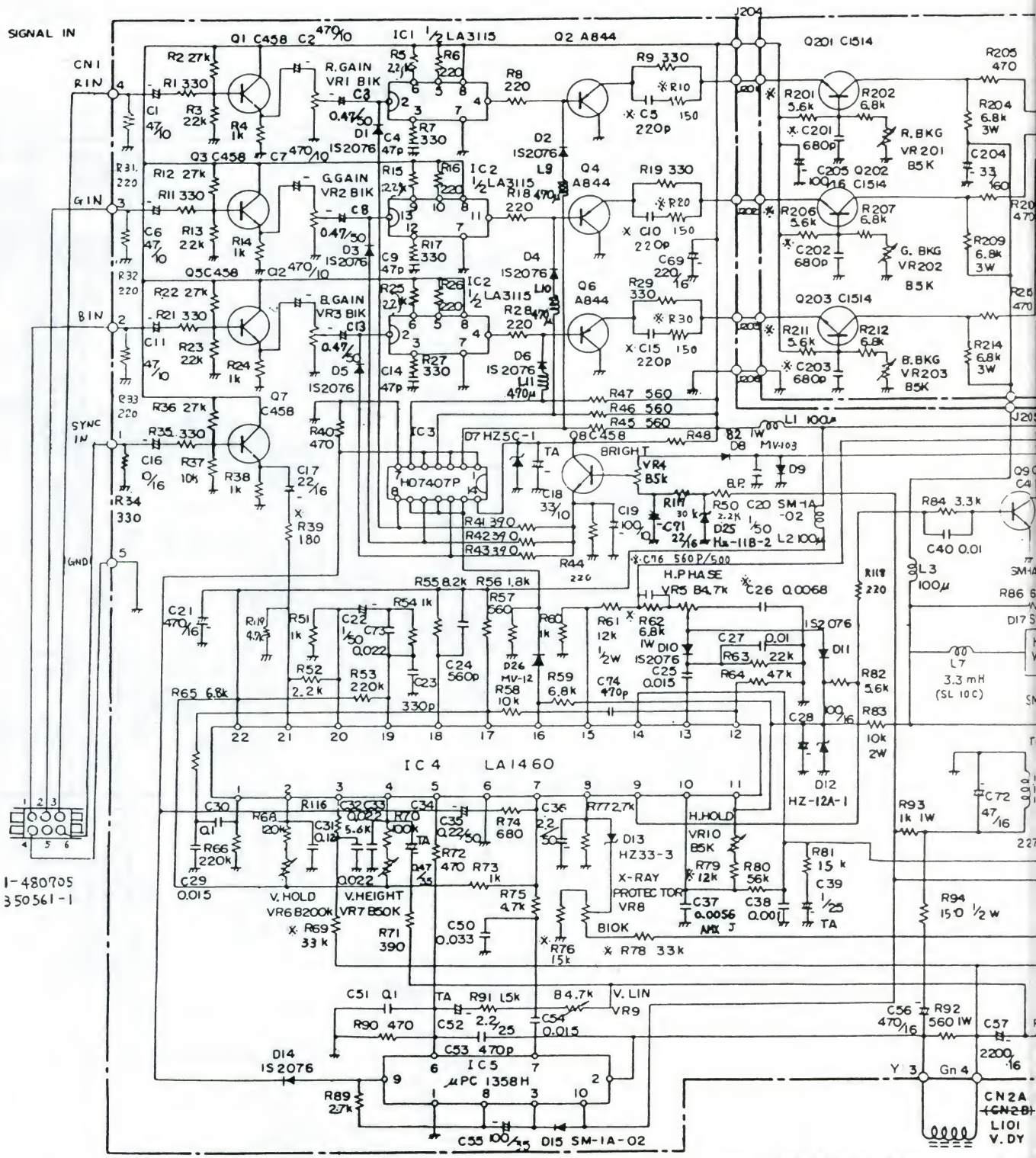
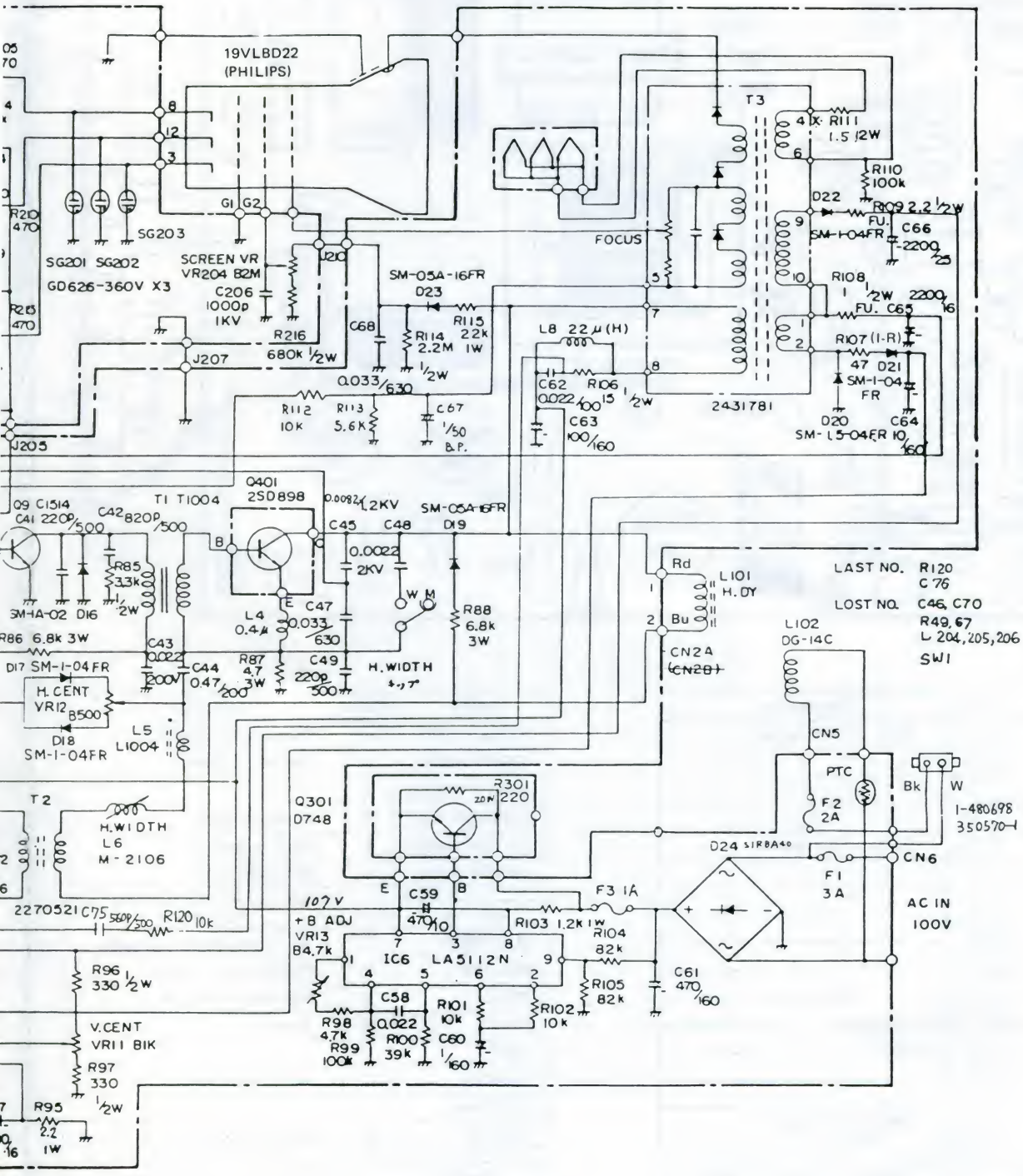


SCHEMATIC DIAGRAM (20" color)



Nuless designed, resistance is of 1/4W;
Nuless designed, condenser withstand voltage is 50V ;

Note: 1. Use CN2B when reversing the polarity of D
2. This schematic drawing represents the basic
it may differ from the actual layout.
3. C44 TAC type 0.47/200 FPD type 0
(I-R) Incombustible resistance
4. C76 backed



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~~(CN28)~~
101
DY

y of DY.
e basic circuitry drawing, so,

type 0.47/400

CM-E20N(B)

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CAUTION (to prevent X-ray exposure from the CRT)

Two variable resistors, the +B ADJ VR (VR11 8-1K ohm) and the X-ray protector VR (VR8 B-10K ohms) are found within the monitor.

They are rigidly adhered for both safety and to prevent X-ray exposure from the CRT.

(IMPORTANT:Please do not remove or change them!)

When a component has to be replaced due to damage to the VR(s) please follow the following procedure when exchanging it.

(IMPORTANT: The monitor must be synchronized with the signal when adjusting.)

(1) To set for +B ADJ VR (VR11)
+B line voltage is to be set at 107V DC ±1V when adjusting VR11.

(2) To set for X-ray protector VR8

(2)-1. Place VR in a counter clockwise position to stop it before turning the monitor power switch to "ON" and decrease AC power supply voltage by approximately 10%.

(2)-2. To be shorted for resistor of 220 ohms 20W R201 which is installed on heat sink plate.

(2)-3. Power supply should be placed in the "ON" position to keep the surface of the CRT slightly fluorescent — i.e. bright.

(2)-4. +B line voltage is to be set at 123V DC± 1V while increasing AC power supply voltage.

(2)-5. When the VR8 to be fixed is in the horizontal oscillation position it may be stopped by slowly rotating it clock wise.

(2)-6. Once the power supply switch is turned "OFF" and AC power has decreased approximately 10% it can be turned "ON" again. Horizontal oscillation may then be confirmed by stopping +B line voltage at 123V DC± 1V while slowly increasing AC voltage.

(3) The VR must again be rigidly adhered thus making any further adjustments impossible.

If you have any question about the above, please feel free to contact us directly or your nearest Universal distributor at any time.